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| APPLICATION NO. | FILING DATE | FIRST NAMED INVENTOR | ATTORNEY DOCKET NO. | CONFIRMATION NO. |
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| 10/692,227 | 10/23/2003 | Rajeev B. Rajan | MSFT-2850/306820.01 | 8383 |

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WOODCOCK WASHBURN LLP
ONE LIBERTY PLACE, 46TH FLOOR
1650 MARKET STREET
PHILADELPHIA, PA 19103

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| EXAMINER |
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EHICHIOYA, FRED I

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| ART UNIT | PAPER NUMBER |
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2162

DATE MAILED: 01/04/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/692,227

Applicant(s)

RAJAN ET AL.

Examiner

Fred I. Ehichioya

Art Unit

2162

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 23 October 2003.
- 2a) ☐ This action is FINAL. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1 - 33 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1 - 9, and 25 - 33 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☒ Claim(s) 1 - 33 are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 23 October 2003 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date _____.
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: _____.

DETAILED ACTION

Election/Restrictions

1. Restriction to one of the following inventions is required under 35 U.S.C. 121:

Group I. Claims 1 - 9, and 25 - 33 drawn to generating a data structure classified in class 707, subclass 102.

Group II. Claims 10 - 16, drawn to manipulating a data structure classified in class 707, subclass 101.

Group III. Claims 17 - 24, drawn to application of database classified in class 707, subclass 104.1.

The inventions are distinct, each from the other because of the following reasons: Inventions listed as Group I, Group II and Group III are related as subcombinations disclosed as usable together in a single combination. The subcombinations are distinct from each other if they are shown to be separately usable. In the instant case, invention has separate utility as follows:

Group I has separate utility such as an instance of a user defined type persisted in a database comprising fields that are stored outside the database. See MPEP § 806.05(d).

Group II has separate utility such as storage of data in a database store. See MPEP § 806.05(d).

Group III has separate utility such as an instance of a user defined type persisted in a database comprising fields that are stored outside the database, storage of data in a database store and a database engine. See MPEP § 806.05(d).

Because these inventions are distinct for the reasons given above and have acquired a separate status in the art as shown by their different classification, restriction for examination purposes as indicated is proper.

Because these inventions are distinct for the reasons given above and the search required for Group I is not required for Group II and Group III, search required for Group II is not required for Group I and Group III, and search required for Group III is not required for Group I and Group II, restriction for examination purposes as indicated is proper.

Because these inventions are distinct for the reasons given above and have acquired a separate status in the art because of their recognized divergent subject matter, restriction for examination purposes as indicated is proper.

During telephone conversation with Steven Rocci, Attorney for the Applicants, Registration Number 30,489 on December 6, 2004 a provisional election was made without traverse to prosecute the invention of Group I, claims 1 – 9, and 25 - 33. Applicant in reply to this Office action must make affirmation of this election. Claims 10 – 24 are withdrawn from further consideration by the examiner, 37 CFR 1.142(b), as being drawn to a non-elected invention.

Applicant is reminded that upon the cancellation of claims to a non-elected invention, the inventorship must be amended in compliance with 37 CFR 1.48(b) if one or more of the currently named inventors is no longer an inventor of at least one claim remaining in the application. Any amendment of inventorship must be accompanied by a request under 37 CFR 1.48(b) and by the fee required under 37 CFR 1.17(i).

Claim Rejections - 35 USC § 103

2. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

3. Claims 1, 2, 9, 25, 26, and 33 are rejected under 35 U.S.C. 103(a) as being unpatentable over U.S Patent 6,671,687 issued to Donald R. Pederson et al (hereinafter "Pederson") in view of U.S. Patent 6,785,690 issued to Thomas J. Davidson (hereinafter "Davidson").

Regarding claims 1 and 25, Pederson teaches in a system in which an object that is an instance of a user defined type can be persisted in a database store (see Pederson column 4, lines 15 – 17), wherein a definition of the user defined type

comprises one or more fields and behaviors (see Davidson column 3, lines 11 – 17), each field having a respective data type, at least one of said fields of the definition being designated as containing data of a type that is to be stored as a file outside of the database store separately from the other fields of the type definition (see Pederson column 3, lines 29 – 47), a method comprising:

storing the data in said at least one designated field of the instance of the object as a file outside of the database store (see column 4, lines 13 – 23); and

storing the data in each of the other fields of the instance of the object within the database store (see column 2, lines 19 – 25).

Pederson does not explicitly indicate claimed “receiving a request to store an object that is an instance of the user defined type”.

Davidson teaches receiving a request to store an object that is an instance of the user-defined type (see column 3, lines 10 – 18 and column 4, lines 18 – 23).

It would have been obvious to one of ordinary skill in the data processing art at the time of the present invention to combine teaching of the cited references because Davidson's teaching of “receiving a request to store an object that is an instance of the user-defined type” would have allowed Pederson's system to keep data items in the persistent storage as object instance to be specified in the information object catalog as suggested by Davidson at column 1, lines 65 – 66.

Further, “receiving a request to store an object that is an instance of the user-defined type” as thought by Davidson improves forming object instances of the collected data available to an application manager, see column 4, lines 20 – 22.

Regarding claims 2 and 26, Pederson teaches providing a link between the data of the fields of the object that are stored within the database store and the data of the field that is stored as a file outside of the database store (see column 3, lines 29 – 47).

Regarding claims 9 and 33, Davidson teaches wherein the type of the object is defined as a class in managed code (see column 2, lines 45 – 54).

4. Claims 3 - 8, and 27 - 32 are rejected under 35 U.S.C. 103(a) as being unpatentable over Pederson in view Davidson and further in view of U.S. Patent 6,070,174 issued to Robert Phillip Starek et al (hereinafter "Starek").

Regarding claims 3 and 27, Pederson or Davidson does not explicitly teach wherein the data of the fields of the object that are stored within the database store are stored as fragments within a column of a table of the database, the column having been designated as the user defined type.

Starek teaches wherein the data of the fields of the object that are stored within the database store are stored as fragments within a column of a table of the database, the column having been designated as the user defined type (see column 10, lines 29 - 51).

It would have been obvious to one of ordinary skill in the art at the time the invention was made to combine teaching of Starek with the teaching of Pederson and Davidson to provide system with a method and apparatus for enhancement of file system calls to a file structure of an operating system. The motivation is that the

Art Unit: 2162

interception of file system calls such that supplemental file management processes can be performed in a manner transparent not only to the user but also to the operating system.

Regarding claims 4 and 28, Davidson teaches wherein a unique identifier associated with the object is stored in another column of the table in a same row as the data of the fields of the object (see column 6, lines 39 - 53).

Regarding claim 5, Starek teaches wherein the data in said at least one designated field of the object is stored as a file within a predetermined directory of a file system of a computer on which the database server is executing (see column 10, lines 14 – 18).

Regarding claims 6 and 30, Davidson teaches providing access by an application to the file in which the data of said at least one field is stored outside the database store via the file system of the computer (see column 2, lines 32 – 44).

Regarding claims 7 and 31, Starek teaches wherein said step of providing access by an application to the fire in which the data of said at least one field is stored comprises:

Art Unit: 2162

receiving a call from the application, via an application programming interface to the file system of the computer, to open the file, wherein the call identifies the field of the object by its identity within the database store (see column 7, lines 9 – 20);

determining from the identity of the field of the object within the database store a path within the file system of the computer to the file containing the data of that field of the object (see column 4, lines 23 – 32); and

executing the call to open the file using the determined path (see column 3, line 65 – column 4, line 6 and column 7, lines 16 – 21).

Regarding claims 8 and 32, Starek teaches wherein the file system of the computer comprises a Microsoft NTFS file system and wherein the application programming interface to the file system comprises the Win32 application programming interface (see column 9, lines 1 – 6).

Regarding claim 29, Starek teaches wherein the program code causes the computer to store the data in said at least one designated field of the object as a file within a predetermined directory of a file system of a computer on which the system is Implemented (see column 14, lines 14 – 18).

Conclusion

5. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Fred I. Ehichioya whose telephone number is 571-272-4034. The examiner can normally be reached on M - F 8:00 AM to 4:30 PM.

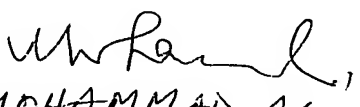
If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, John E. Breene can be reached on 571-272-4107. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only.

For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Fred I. Ehichioya
Patent Examiner
Art Unit 2162

December 23, 2004


MOHAMMAD ALI
PRIMARY EXAMINER